



MONITORING AND PREVENTING HAZARDOUS WORK EXPOSURES

WHAT IS THE PUBLIC HEALTH PROBLEM?

- Each day, employers report over 800 new cases of occupational disease.
- Occupational diseases often are insidious, developing slowly over the lifetime of a worker.
- Because the human body often does not give warning about workplace overexposure, special technology is needed to monitor the workplace environment.
- Many businesses (especially small-sized companies) are unable to develop and implement engineering solutions to control exposures and prevent harm to workers.

WHAT HAS NIOSH ACCOMPLISHED?

The National Institute for Occupational Safety and Health (NIOSH) conducts research in laboratories and at work sites to develop procedures and equipment for measuring and controlling occupational health hazards. This research produces practical solutions to improve the health of workers. Many of these projects are particularly important to small- and medium-sized businesses, which usually lack in-house experts in occupational health.

Examples of program in action:

- The *NIOSH Manual of Analytical Methods* provides methods to monitor contaminants in workplace air and in the blood and urine of workers. It is used in workplaces and research laboratories worldwide.
- NIOSH engineers have created control measures for high-hazard occupations. NIOSH developed new designs that reduce lead exposures in radiator shops by 90%–98%. NIOSH also developed fume controls for asphalt paving machines used in the construction of highways; all machines manufactured after 1997 are equipped with these controls.
- NIOSH developed a hand wipe method that uses a simple color change to quickly and easily detect the presence of lead on skin and surfaces in industries where lead is produced or used. This can prompt workers to perform more thorough hand washing to decrease the risk of ingesting lead during eating, drinking, or smoking. Through this novel technology, lead exposure can be reduced for more than 10,000 workers and 900,000 children in the United States. NIOSH obtained a patent for this method, licensed it commercially, and is disseminating information about it.

WHAT ARE THE NEXT STEPS?

Future activities will focus on addressing the health protection needs of employees working at small- and medium-sized businesses. In addition, the latest technologies (e.g., advanced microprocessors and sensors) will be used to develop faster and in many cases, real-time, less expensive, and more accurate ways to monitor exposure to chemicals, physical agents, and ergonomic hazards. NIOSH is planning to conduct new studies regarding (a) control technology in the silica, mining, construction, and pharmaceutical industries and (b) ventilation system vulnerability in the event of biological and chemical threats.

*Additional information is available at www.cdc.gov/niosh/docs/2003-100/, www.cdc.gov/niosh/nmam/nmampub.html, and www.cdc.gov/niosh/topics/asphalt/. For more information on other NIOSH programs, visit www.cdc.gov/niosh/docs/pib/.
March 2004*

